Dialectical Behaviour Therapy in Adolescents for Suicide Prevention: Systematic Review of Clinical-Effectiveness

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Introduction

Dialectical behaviour therapy (DBT) is a type of cognitive behavioural therapy (CBT) that was originally developed as a treatment for chronically parasuicidal women with borderline personality disorder (BPD).[1] DBT has since been used as a treatment for other populations.[2] Parasuicidal behaviour is considered to be any acute intentionally self-harming behaviour resulting in physical harm with or without an intent to die.[1] This behaviour is also known as suicidal or non-suicidal self-injury. BPD is a condition that is associated with challenges in regulating emotions and difficulty in tolerating emotional distress.[3] Suicidal behaviour is associated with approximately 75% of BPD cases, and approximately 10% of patients with BPD eventually complete suicide.[4]

The skills training portion of DBT comprises four standard modules including core mindfulness (from Zen Buddhism), distress tolerance with a focus on acceptance, interpersonal effectiveness with a focus on change, and emotional regulation.[5] These modules are addressed in individual psychotherapy sessions, in group sessions, through telephone support, and with a consultation team.[5,6] Although skills training is a critical component, DBT focuses not only on change, but also on the acceptance of issues that cannot be changed.[7] Treatment involves a pretreatment phase that orients the participant and the family to the process and sets goals, followed by an early phase that concentrates on decreasing self-injury and life-threatening behaviours.[8] Later phases focus on addressing emotional experiences from the past, and goal setting for self-respect and capacity for joy.[9] Previous evidence suggests that DBT is clinically effective for the treatment of suicide behaviours in adults with BPD compared with treatment as usual (TAU). It has now been adapted for the treatment of adolescents by including family members in the treatment program and, in some cases, shortening the duration of treatment from the standard of one year for adult participants to a range of 12 weeks to 16 weeks.[10]

In Canada, the suicide rate across all ages is 11.3 per 100,000 people, and the rate for adolescents who are aged 15 years to 19 years is 9.9 per 100,000. This is an increase from the suicide rate of 1.3 per 100,000 in youths who are aged 10 years to 14 years.[11] Youths and adolescents may be an at-risk population at an age when it would be critical to implement early intervention and suicide prevention strategies. This report reviews the evidence regarding the clinical effectiveness of DBT for the prevention of suicide in adolescents.

Objective

The aim of the report is to answer the following research question:

What is the evidence on the clinical effectiveness of dialectical behaviour therapy for suicide prevention in adolescents (18 years of age or younger)?

Methods

Published literature was obtained by cross-searching MEDLINE, Embase, PsycINFO, and ERIC on the OVID search system between 2004 and January 2009. Regular alerts were established on MEDLINE, Embase, PsycINFO, and ERIC. The information that was retrieved using alerts is current to March 9, 2009. Parallel searches were performed on The Cochrane Library (Issue 4, 2008) and the University of York Centre for Reviews and Dissemination

(CRD) databases. Language publication date limits were not applied. Filters were applied to limit the retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials (RCTs), controlled clinical trials, observational studies, and guidelines. The websites of health technology assessment and related agencies were also searched, as were specialized databases such as those of the National Institute for Health and Clinical Excellence, ECRI Institute, and EuroScan. The Google search engine was used to search for information on the Internet.

Results

Two systematic reviews meeting the inclusion criteria were identified. One RCT and four observational studies that were not included in the two systematic reviews were also identified. No health technology assessments met the inclusion criteria.

Systematic Reviews and Meta-Analyses

A systematic review and meta-analysis[12] of studies in which CBT was used to reduce suicide behaviour was identified. The authors' definition of suicide behaviour included completed suicides, suicide attempts, intent or plans to commit suicide, and suicide ideation. After applying inclusion and exclusion criteria, 28 articles were included in the review. Eight of these articles evaluated DBT. A standard DBT program was used in four of the eight studies. This standard DBT program was described as:

> a manualized treatment that combines treatment strategies from behavioural, cognitive, and supportive psychotherapies…. It includes concomitant weekly individual and group therapy that is conducted for one year. Individual DBT applies directive, problem-oriented techniques (including behavioural skill training, contingency management, cognitive modification, and exposure to emotional cues) that are balanced with supportive techniques, such as reflection, empathy, and acceptance…. The emphasis is on teaching patients how to manage emotional trauma rather than reducing or taking them out of crisis…. Group therapy met once each week for two and a half hours and followed a psychoeducational format. Behavioural skills in three main areas were taught as follows: 1) interpersonal skills, 2) distress tolerance/reality acceptance skills, and 3) emotional regulation." (p. 1,061)[1]

In a modified version of DBT that was used in the remaining four studies, the treatment was provided in a two-week intensive program, in a program lasting three or six months, or in a hybrid program that combined DBT with psychotherapy and a problem-solving approach.

The authors reported a statistically significant treatment effect of DBT. The authors noted that the conventional DBT program had the longest duration of any of the therapies that were reviewed and suggested that a higher cost would likely be associated with the use of DBT when it was compared with a modified DBT program of shorter duration or with traditional psychotherapy.

The other systematic review[4] examined the psychotherapeutic treatment of adolescents with BPD. Two studies were included that evaluated DBT. One of the two included studies evaluated a 12-week DBT program. The authors of the systematic review stated that there were significant reductions in suicidal ideation, depression or anxiety, interpersonal sensitivity, and overall psychiatric symptom severity in the DBT group compared with the control group. No differences in suicide attempt rates were reported between the groups. The other study assessed an intensive two-week DBT program compared with psychotherapy treatment. The authors stated that there were significant reductions in depressive symptoms, parasuicidal behaviours, and suicide ideation at one year for both the DBT group and the control group. This short-term DBT resulted in a reduction in aggressive behaviour compared with the TAU group. The authors of the systematic review concluded that more evidence, including controlled trials involving CBT (and DBT), is needed to gain a more complete understanding of the effect of these therapies on BPD and its

associated traits and behaviours. The authors also highlighted the need for more studies to be conducted in adolescents.

Randomized Controlled Trials

An RCT[13] compared the effectiveness of mode deactivation therapy (MDT) and DBT in adolescent males with physical aggression, anger, suicide ideation, and mixed personality disorders or traits. This study's limitations included the small sample size and the randomization methods (coin toss). Despite these limitations, the data suggested that MDT was more effective than DBT in reducing the symptoms of depression and suicide ideation, although both treatment approaches showed some clinical effectiveness.

Observational Studies

One observational study[5] evaluated the effectiveness of DBT that was delivered in a community setting to female adolescents with persistent and severe, deliberate self-harm behaviour. DBT consisted of a once-weekly individual session (one-hour duration), once-weekly group skills training session (1.5-hour duration), and ongoing telephone support. A statistically significant reduction in self-reported depression, hopelessness, and occurrences of deliberate self-harm; and a statistically significant increase in general function were reported. The authors concluded that there was an improvement in the scores for all post-DBT measures.

In another study[14] on the use of DBT in adolescents with BPD, the authors reported statistically significant decreases in feelings of ―wanting to hurt self" and ―wanting to kill self." The authors also reported clinically significant changes in the percentage of those wanting to kill themselves and in the percentage of those never wanting to kill themselves. The authors concluded that DBT is a promising treatment option for adolescents with features of BPD.

Another study[15] assessed DBT for adolescents with bipolar disorder. The study reported statistically significant decreases in suicidality, emotional dysregulation, and depressive symptoms. The authors concluded that DBT was a promising treatment option for adolescents with bipolar disorder.

Findings from a study[3] assessing the use of DBT for the treatment of deliberate self-harm behaviour among adolescent females in a residential treatment facility found that the start of DBT coincided with statistically significant reductions in the number of premature treatment terminations, hospitalization events, number of inpatients days, and the mean duration of time that residents spent in restraints or in seclusion.

Limitations

Despite the inclusion of all study types in this review, there was a paucity of literature on the use of DBT for the treatment of suicidality in adolescents. The systematic reviews assessed several therapies (including DBT) or assessed DBT in mixed-age populations, and they did not provide complete data abstraction for the included studies. Therefore, for at least one of the systematic reviews,[12] it was not possible to determine how many DBT studies were performed with adolescent participants, and data from all the DBT-based studies that were included in the systematic review were pooled for meta-analysis.

In general, the included studies had a small sample size, and some did not report drop-out rates. In addition, information about the treatment provider(s) in terms of training, experience, credentials, and extent of involvement was lacking in most of the included studies.

Observational studies may not adequately control for potential biases, and without a control group it is not possible to know the incremental improvements that can be attributed to DBT. Furthermore, all the studies included data compiled from self-assessments or from non-blinded assessments by treatment providers, and outcomes based on non-blinded assessments are subject to bias. There was also a lack of information about the follow-up beyond one year of treatment.

In addition, this review had several limitations. A limited literature search was conducted, and it is possible that studies not published in the databases searched were omitted. Inclusion was based exclusively on the methodological details in the published article, and additional information was not sought from study authors. Therefore, it is possible that studies were excluded.

Conclusions

All the included studies reported some clinical effectiveness from the use of DBT in reducing suicidality, including a reduction in self-harm behaviours and suicide ideation. No statistically significant differences were reported in completed suicides among DBT-treated participants. It has been suggested, however, that completed suicides may not be the most reliable outcome measure, because the frequency is low.[12] Instead, suicidality, which represents a continuum from intent and planning to completion, may be more informative.[12] This review did not focus solely on studies of individuals at high-risk, such as those who had previously harmed themselves deliberately,[16] and the targeted recruitment of such individuals may offer insight into the effectiveness of DBT in this patient population. In addition, studies assessing DBT in a high-risk population may reveal changes that are not observed in a mixed or low-risk population.

DBT research is young, and the available evidence on the use of DBT in adolescents is sparse.[5] Most of the studies that were included in this report were small and uncontrolled and evaluated measures pre- and post-treatment. Little high-quality evidence on the clinical effectiveness of DBT for the prevention of suicide and for the treatment of suicidality was identified in our review. In addition, most of the included studies evaluated the use of DBT for patients with BPD. Less is known about the clinical effectiveness of DBT in patients with other conditions.[3] More evidence is needed from high-quality studies, including prospective RCTs on DBT for the treatment of suicidality in adolescents with BPD and bipolar disorder. In addition, more research is needed to evaluate the effectiveness of DBT when used for other psychiatric conditions that are associated with thoughts of suicide or self-harming behaviour. RCTs should be of an appropriate size to counter the anticipated high drop-out rate.

Other considerations, including access to personnel who are trained in delivering DBT, appropriate facilities for treatment (in-hospital, residential, or outpatient-based), and the costs that are associated with DBT, will likely contribute to the decision of whether DBT should be used to treat adolescents with suicidal thoughts. This report did not assess the cost-effectiveness of DBT. Given the length of treatment (12 weeks to one year), the associated costs may be high.[17] However, one study that examined the effectiveness of DBT in women with BPD noted a statistically significant decrease in hospitalization.[18]

The results of this review suggest that DBT may be effective in the treatment of suicidality among adolescents with or suspected to have BPD and bipolar disorder. More evidence is needed from high-quality studies to confirm these findings. This information, with an evaluation of the long-term effectiveness of the use of DBT among suicidal adolescents and assessments of the cost-effectiveness of DBT, would contribute to the decision-making process of treatment providers and policy-makers.

References

1. Linehan MM, Armstrong HE, Suarez A, Allmon D, Heard HL. Cognitive-behavioral treatment of chronically parasuicidal borderline patients. Arch Gen Psychiatry. 1991 Dec;48(12):1060-4.
2. Katz L, Cox B, Gunasekara S, Miller A. Feasibility of dialectical behavior therapy for suicidal adolescent inpatients. J Am Acad Child Adolesc Psychiatry. 2004;43(3):276-82.
3. Sunseri PA. Preliminary outcomes on the use of dialectical behavior therapy to reduce hospitalization among adolescents in residential care. Resid Treat Child Youth. 2004;21(4):59-76.
4. Guilé JM, Greenfield B, Breton JJ, Cohen D, Labelle R. Is psychotherapy effective for

borderline adolescents? Clin Neuropsychiatry: J Treat Eval. 2005;2(5):277-82.

5. James AC, Taylor A, Winmill L, Alfoadari K. A preliminary community study of dialectical behaviour therapy (DBT) with adolescent females demonstrating persistent, deliberate self-harm (DSH). Child Adolesc Ment Health. 2008;13(3):148-52.
6. Newton B, ham-Vaughan S, Lees A. Service evaluation of a pilot project examining the impact of dialectical behavioural therapy on outpatients diagnosed with borderline personality disorder. Clin Psychol Forum. 2007;(169):5-9.
7. Hjalmarsson E, Kaver A, Perseius KI, Cederberg K, Ghaderi A. Dialectical behaviour therapy for borderline personality disorder among adolescents and young adults: pilot study, extending the research findings in new settings and cultures. Clin Psychol. 2008 Mar;12(1):18-29.
8. Dialectical behavioral therapy (DBT) in borderline personality disorder - early assessment briefs (Alert) [Internet]. Stockholm: Swedish Council on Technology Assessment in Health Care (SBU); 2005. [cited 2009 Feb 23]. Available from: http://www.sbu.se/en/Published/Alert/Dialectical-Behavioral-Therapy-DBT-in-Borderline-Personality-Disorder/
9. Miller AL, Hartstein JL. Dialectical behavior therapy supervision and consultation with suicidal, multiproblem youth: The nuts and bolts. In: Neill TK, editor. Helping others help children: Clinical supervision of child psychotherapy. Washington: American Psychological Association; 2006. p. 177-91.
10. Miller AL, Wagner EE, Rathus JH. Dialectical behavior therapy for suicidal adolescents: an overview. In: Steiner H, editor. Handbook of mental health interventions in children and adolescents: an integrated developmental approach. San Francisco: Jossey-Bass; 2004. p. 659-84.
11. Suicides and suicide rate, by sex and by age group (both sexes) [Internet]. Ottawa: Statistics Canada; 2008 Nov 25. [cited 2009 Feb 23]. Available from: http://www40.statcan.gc.ca/l01/cst01/perhlth66a-eng.htm
12. Tarrier N, Taylor K, Gooding P. Cognitive-behavioral interventions to reduce suicide behavior: a systematic review and meta-analysis. Behav Modif. 2008;32(1):77-108.
13. Apsche JA, Bass CK, Houston MA. A one year study of adolescent males with aggression and problems of conduct and personality: a comparison of MDT and DBT. Int J Behav Consult Ther. 2006;2(4):544-52.
14. Woodberry KA, Popenoe EJ. Implementing dialectical behavior therapy with adolescents and their families in a community outpatient clinic. Cogn Behav Pract. 2008;15(3):277-86.
15. Goldstein TR, Axelson DA, Birmaher B, Brent DA. Dialectical behavior therapy for adolescents with bipolar disorder: a 1-year open trial. J Am Acad Child Adolesc Psychiatry. 2007 Jul;46(7):820-30.
16. Crawford MJ, Thomas O, Khan N, Kulinskaya E. Psychosocial interventions following self-harm: systematic review of their efficacy in preventing suicide. Br J Psychiatry [Internet]. 2007 Jan [cited 2008 Jan 22];190:11-7. Available from: http://bjp.rcpsych.org/cgi/reprint/190/1/11
17. Brazier J, Tumur I, Holmes M, Ferriter M, Parry G, Dent-Brown K, et al. Psychological therapies including dialectical behaviour therapy for borderline personality disorder: a systematic review and preliminary economic evaluation. Health Technol Assess [Internet] 2006 Sep [cited 2008 Oct 2];10(35):iii, ix-xii,1-117. Available from: http://www.hta.ac.uk/execsumm/summ1035.htm
18. Comtois KA, Elwood L, Holdcraft LC, Smith WR, Simpson TL. Effectiveness of dialectical behavior therapy in a community mental health center. Cogn Behav Pract. 2007;14(4):406-14.

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